

REMARKS

Entry of the amendments is respectfully requested. Claims 1-11 have been canceled. New claims 12-21 have been added, therefore, claims 12-21 are pending in this application.

In this Office Action, the Examiner has indicated that, instead of claims 1-4, claims 1-8 have been examined. This is noted with appreciation. Non-elected claims 9-11 have been canceled herein without prejudice. Applicant reserves the right to file a divisional application based on these claims at a later date.

In this Office Action, the Examiner has also objected to the drawings and has indicated that claims 3 and 7 were not examined. In response to the objection to the drawings, Applicant submits herewith, under separate cover, a new drawing sheet that includes new Figure 3, which shows a prior art nozzle having an uninterrupted discharge aperture. It should be noted that original claims 3 and 7 call for "the discharge aperture has a discharge area equal to about 10 - 20 % of a *corresponding* uninterrupted discharge aperture." Support for new Figure 3 can be found on page 3, lines 1-9 of the application. These lines state that in the prior art, "the corresponding nozzle had an uninterrupted slot with the same extension, at least width, as the hold pattern according to the invention. . . . By way of example, the total discharge area of the nozzle may lie within 10 -20 % of a corresponding, uninterrupted discharge opening according to the prior art." Thus, new Figure 3, which shows a prior art nozzle having an uninterrupted discharge aperture, is not new matter. In addition, the specification has been amended to include references to the new Figure 3 and new reference numeral 6, which calls out the uninterrupted discharge aperture of the prior art nozzle. Withdrawal of the objection and examination of claims 3 and 7 are respectfully requested.

The specification has been additionally amended to correct a typographical error in the paragraph on page 2, in lines 16-19, where an "a.o" was in the paragraph.

In this Office Action, the Examiner has also rejected claims 1, 2, and 4 under § 102(b) as being anticipated by Schwob et al. (U.S. Patent No. 4,324,117), rejected claims 1, 2, 4-6, and 8 under § 103(a) as being unpatentable over Hilgerink (U.S. Patent No. 1,950,796) and rejected

claims 5, 6, and 8 under § 103(a) as being unpatentable over Schwob et al. Claims 1-8 have been canceled, obviating the rejection of these claims.

New claims 12-21 have been added and are believed to be consistent with the elected invention. Favorable reconsideration and allowance of this application is respectfully requested in light of the foregoing amendments and the remarks that follow. Early consideration and allowance are respectfully requested.

The remainder of the remarks presented below are directed to the allowability of each independent claim.

Independent Claim 12

Claim 12 is believed to be in condition for allowance. Claim 12 recites a method for the spray extrusion of a low viscosity coating material onto an object via a nozzle connected to a pressurized source of the coating material. Claim 12 requires "discharging the coating material through a discharge aperture of the nozzle under pressure, the discharge aperture comprising a pattern of discrete discharge holes debouching into a front surface of the nozzle and configured such that the coating material is discharged from the holes in separate strings with a relatively high discharge velocity." Claim 12 further requires "impinging the separate strings of the coating material on the object, then fusing the impinged separate strings of the coating material together on the object to form a continuous strip of the coating material."

None of the references, alone or in combination, disclose, teach, or suggest each and every element of the novel subject matter disclosed and set forth in claim 12. Therefore, claim 12 is believed to define over the references of record.

The Schob et al. patent does not disclose, teach, or suggest the method of claim 12, as it does not discharge coating material from holes in separate strings. Instead, the Schwob et al. patent discloses a jet device having a coating head means 10 defining a fluid receiving reservoir 12 and including an orifice plate 14 defining a plurality of orifices 16 communicating with the reservoir 12. (col. 4, lines 18-21). Liquid dye is supplied under pressure to the fluid receiving

reservoir 12. When this occurs, the fluid flows through each of the orifices 16 and emerges therefrom as a fluid filament 28. (col. 4, lines 38-41). Bending of the orifice plate 14 stimulates each of the fluid filaments to cause them to break up into jet drop streams 34 of fluid drops. Hence, the fluid is discharged as discrete drops rather than streams or strings, as is required by claim 12.

The Hilgerink patent does not disclose, teach, or suggest the method of claim 12, as material discharged from its nozzle could not impinge an object in separate strings. In contrast, the Hilgerink patent discloses a barrel 1 having a cylindrical bore 2 and a transversely shaped cavity 3. Extending across the discharge end of the cavity is a wall 4 with a plurality of bores or discharge ports 5 that extend perpendicularly to the wall 4 and parallel with the axis of stream delivery. Beyond the wall 4 is a pair of discharge lips 6 spaced apart at a distance of substantially identical with the diameter of the bores 5 and receiving the discharge of the bores between them. (page 1, lines 70-87). The fluid is discharged such that the streams merge to form a single stream shaped like a ribbon just downstream of the nozzle. (page 1, lines 16-30 and 94-98). Hence, materials discharged from the nozzle could not impinge on an object in discrete strings. Nor is there any suggestion of discrete strings of material impinging on an object and *subsequently* fusing into a continuous strip as recited in proposed new claim. Further, there is no disclosure, teaching, or suggestion in Hilgerink of "the discharge aperture comprising a pattern of discrete discharge holes *debouching into a front surface of the nozzle*," as claim 12 additionally requires.

Thus, even if the references were combined, the invention would not result. For at least these reasons, claim 12 is believed to be in condition for allowance and allowance is respectfully requested.

Independent Claim 16

Claim 16 is believed to be in condition for allowance. Claim 16 recites a nozzle for the spray extrusion of a low viscosity coating material. Claim 16 requires a connector and a body. Claim 16 further requires "a tip having a plurality of discrete coating material discharge holes

formed therein, the holes debouching into a front surface of the nozzle and being dimensioned and positioned relative to one another such that the coating material is discharged therefrom and impinges upon the object in discrete strings and thereafter fuses together on the object to form a continuous strip of the coating material.”

None of the references, alone or in combination, disclose, teach, or suggest each and every element of the novel subject matter disclosed and set forth in claim 16. Therefore, claim 16 is believed to define over the references of record.

As should be apparent from above, the Schob et al. patent does not disclose, teach, or suggest the nozzle of claim 16, because, *inter alia*, the Schob et al. patent does not have a nozzle with holes that are dimensioned and positioned relative to one another such that the coating material is discharged therefrom and impinges upon the object in *discrete strings*, as claim 16 requires.

As should also be apparent from above, the Hilgerink patent fails to disclose, teach, or suggest the nozzle of claim 16, because, *inter alia*, its nozzle does not discharge material such that it would impinge an object in separate strings. Thus, even if the references were combined, the invention would not result because there is no teaching in the prior art of record of a nozzle that discharges material such that it would impinge an object in separate strings. Nor is there any disclosure, teaching, or suggestion in Hilgerink of a nozzle with holes that discharge material such that discrete strings of material impinge on an object in discrete strings and *thereafter* fuse together on the object to form a continuous strip as required by claim 16. Further, there is no disclosure, teaching, or suggestion in Hilgerink of “the discharge aperture comprising a pattern of discrete discharge holes *debouching into a front surface of the nozzle*,” as claim 16 additionally requires.

For at least these reasons, claim 16 is believed to be in condition for allowance and allowance is respectfully requested.

Independent Claim 21

Claim 21 is believed to be in condition for allowance. Claim 21 recites a nozzle for the spray extrusion of a low viscosity coating material onto an object. Claim 21 requires the nozzle to include a connector and a body. Claim 21 further requires "a tip having a plurality of discrete coating material discharge holes formed therein, the holes debouching into a front surface of the nozzle and being dimensioned and positioned relative to one another such that the coating material is discharged therefrom and impinges upon the object in discrete strings and thereafter fuses together on the object to form a continuous strip of the coating material, wherein the holes have a combined discharge area equal to about 10 - 20 % of the area of a corresponding uninterrupted discharge aperture."

None of the references, alone or in combination, disclose, teach, or suggest each and every element of the novel subject matter disclosed and set forth in claim 21. Therefore, claim 21 is believed to define over the references of record.

As should be apparent from the above discussion, the Schob et al. patent does not disclose, teach, or suggest the nozzle of claim 21, as it does not have a nozzle with holes that are dimensioned and positioned relative to one another such that the coating material is discharged therefrom and impinges upon the object in discrete strings and thereafter fuses together on the object to form a continuous strip of the coating material, as claim 21 requires.

As should be also apparent from the above discussion, the Hilgerink patent fails to disclose, teach, or suggest the nozzle of claim 21, as its nozzle does not discharge material such that it would impinge an object in discrete strings. Nor is there any teaching or suggestion of a nozzle with holes that discharge material such that discrete strings of material impinge on an object in discrete strings and *thereafter* fuse together on the object to form a continuous strip as required by claim 21. Therefore, even if the references were combined, the invention would not result. Further, there is no disclosure, teaching, or suggestion in Hilgerink of "the discharge aperture comprising a pattern of discrete discharge holes *debouching into a front surface of the nozzle*," as claim 21 additionally requires.

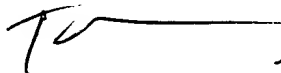
For at least these reasons, claim 21 is believed to be in condition for allowance and allowance is respectfully requested.

Conclusion

All of the claims as amended are believed to define patentable subject matter and to be in proper form for allowance. Therefore, consideration and allowance of claims 12-21 are respectfully requested.

The Commissioner is authorized to charge payment of any fees associated with this communication or credit any overpayment to Deposit Account No. 50-1170.

Respectfully submitted,



Timothy E. Newholm
Reg. No. 34,400

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BOYLE FREDRICKSON NEWHOLM
STEIN & GRATZ, S.C.
250 Plaza, Suite 1030
250 East Wisconsin Avenue
Milwaukee, WI 53202
Telephone: (414) 225-9755
Facsimile: (414) 225-9753



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